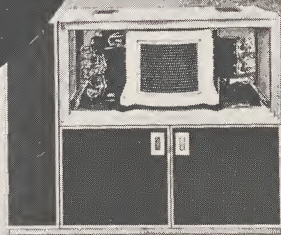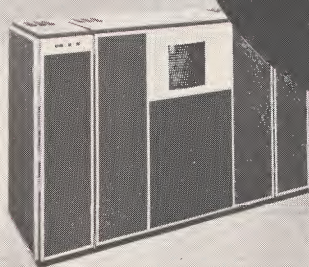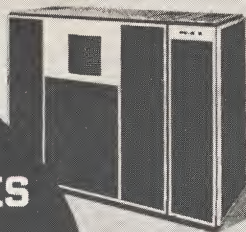# dp/f 5000 SERIES

DISCfILE SYSTEMS

data products corporation

5022, 5025, 5026 DISCFILE® systems

The 5000 Series DISCFILE systems encompass a wide range of random-access disc memories. Each model offers a unique combination of cost, capacity, operating speed, and interface. Within the DISCFILE family can be found the optimum answer to virtually any requirement for on-line disc storage.

The Models 5022, 5025, and 5026 DISCFILE systems offer storage capacities in the medium range of the capacity spectrum. Storage capacities of between 50 million and one billion bits are available. Any system may be obtained with less than maximum capacity, then field expanded when storage requirements dictate.

DISCFILE systems contain two types of components: Disc Units and Logic Units. The number of Disc Units and Logic Units included in a system is a function of required storage capacity, access capabilities, and interface.

A Disc Unit contains the discs, read/write electronics, switching logic, and electromechanical components required to rotate the discs and position the read/write heads. Up to four Disc Units may be included in one system.

The Logic Unit interprets controller commands and supplies the required control signals to the Disc Unit. Also contained in the Logic Unit is extensive error check logic for monitoring sequence, control, and data errors.
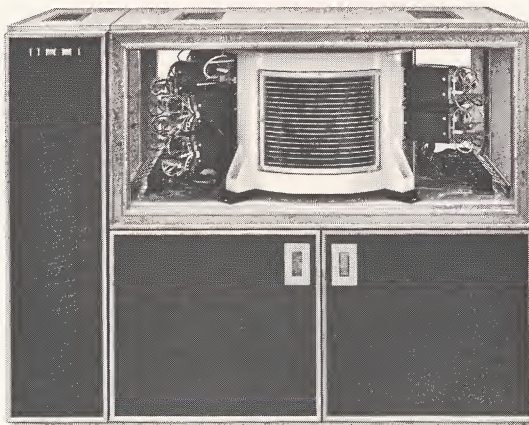
The Model 5022 system pictured above is the simplest and lowest-cost member of the DISCFILE family. Employing the very simple pulse interface and a single access channel, the Model 5022 is ideal for the user or small OEM who requires a high-performance memory, but must be concerned with simplicity of controller design, ease of installation, and low maintenance.
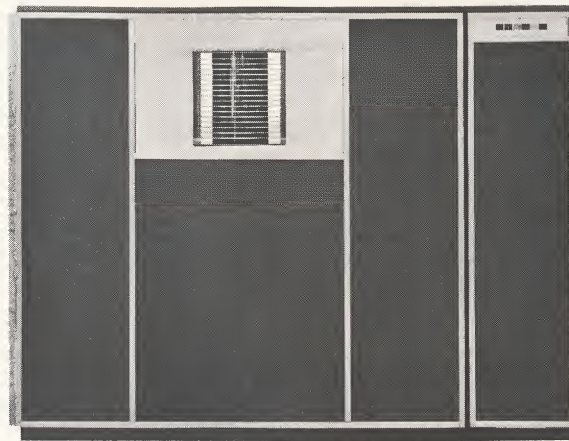
Pictured above is the Model 5026 system. Consisting of a Logic Unit and up to two dual-access Disc Units, this system is compatible with the Model 5022, yet has the additional advantage of multiple-seek capability. The Model 5026 is intended for use with the sophisticated single-channel computer which requires capabilities not normally found in a single-channel storage system.

lowest cost

The DISCFILE systems offer the lowest cost-per-bit of any systems in the medium range of storage capacities. In addition, the high reliability and resultant low maintenance requirements contribute to low total operating costs throughout the life of the system.

virtual error-free operation

Read/write operations exhibit data error rates so low that they are not a significant factor in reliability statements. Systems currently operating in the field average far less than one recoverable data error in 10^{10} bits transferred. Because of fail-safe characteristics built into the systems, nonrecoverable errors are possible only with simultaneous occurrence of several failures.

low maintenance requirement

The mechanical design of the system permits convenient access to any internal part for inspection, adjustment, or replacement. Routine preventive maintenance requires approximately one hour per week. Unscheduled maintenance for correction of failures normally will not exceed two hours per month.

well-defined interface

Two separate interfaces are employed. A serial pulse interface is used for systems which include a Logic Unit; a parallel interface consisting of levels and contact closures is used when the data processor communicates directly with the Disc Unit. Both interfaces are very easy-to-use and offer the greatest possible latitude to the programmer.

compatible format

The interface and format used in the DISCFILE product line will never be obsolete. The same interfaces and format are used on all models of our present product line and will be available for all prospective new systems.

simple installation

All aspects of the 5000 Series design are directed toward ease-of-installation. Systems are normally operating on-line within a very few days after delivery.

dual-access

An outstanding feature offered in this product line is the capability of simultaneously accessing data on two discs in each Disc Unit. Thus, two computers may use the same data storage system, or a single computer may double its throughput by employing a dual-channel controller.
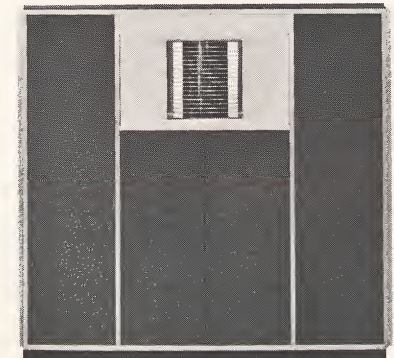
multiple-seek

Multiple-seek capability, inherent in a system consisting of one or more Logic Units and a dual-channel Disc Unit, allows a seek operation for an address while data is being transferred at another address. This feature provides a dramatic reduction in access time by virtually eliminating positioner motion time delays.

low access times

Within a file of data occupying one-quarter of the total file capacity, access times, including 26 milliseconds latency and all other delays, are:

Single Channel	148 ms
Multiple Seek	100 ms
Dual-Access	78 ms

The Model 5025 system, incorporating both the dual-access and multiple-seek features, is the most powerful of the three systems. Normally supplied without Logic Units, the Model 5025 employs the basic parallel interface used for communicating directly with the Disc Unit. The Disc Unit interface requires minimum electronics, resulting in low cost relative to the outstanding features of this system. In addition, price reductions are available for volume purchases, making this system most attractive to the large OEM.
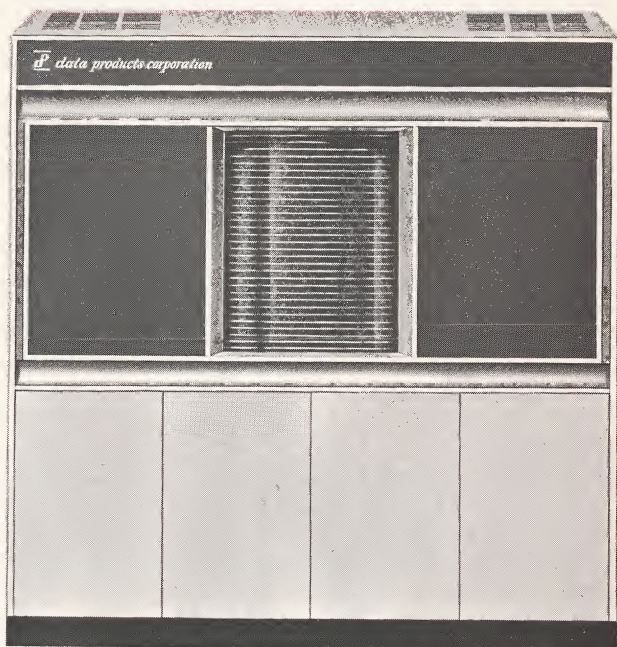
model 5045

highlights

- Extremely low cost-per-bit system — includes complete electronics

- Multiple-seek and dual-access capability

- Silicon semiconductors and integrated microelectronic circuits

- Massive storage in a small self-contained module

- Unprecedented variety of configurations

- Fixed or variable record length

The Model 5045 DISCfILE system, latest in the DISCfILE product line, features storage capacity equal to 300-percent of that in other systems of the 5000 Series, at only a moderate increase in price. This results in greatly reduced cost-per-bit.

Contained in a single module, the Model 5045 occupies approximately the same space as a Model 5025. The storage capacity of over 760 million bits is obtained by using 32 data discs — double the number used in other models of the 5000 Series — and recording data at a higher density. The increase in bit density, with no increase in error rates, is made possible by using a vastly improved recording surface in the discs, redesigned read/write electronics, and integrated microminiature logic circuits.

By employing a new and much-simplified form of the dual-access channels used in the Model 5025, it has been possible to incorporate electronic switching in place of many of the relay switches which are used in that system. This yields improved reliability in input address decoding and routing of read/write data. Also, the faster switching provided by the electronic logic has resulted in significant improvement in access times.

The Model 5045 is available in a wide variety of configurations to provide the ultimate in compatibility with present and prospective data processing systems. In either its 325 or 326 configurations, the Model 5045 is interface and format compatible with the Models 5022, 5024, 5025, or 5026 DISCfILE systems. The 360 configuration of the Model 5045 employs the same interface and variable record length format used in Data Products new replaceable disc pack DATASTAK T.M. systems. This variety of configurations makes the Model 5045 the most versatile disc memory of comparable on-line storage capacity currently on the market.

General information manuals and specifications are available for every system in the DISCfILE product line. For more information, contact:

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DATASTAK T.M.